

AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph at page 12, line 18, with the following rewritten paragraph:

Fig. 1 is a system block diagram of an inverter control device for driving an induction motor in preferred embodiment 1 of the invention. In Fig. 1, a main circuit of the inverter control device includes an AC power source 1, a diode bridge 2 for converting the AC power into a DC power, a reactor 11 of small capacity of 2 mH or less, a capacitor 12 of small capacity of 100 μ F or less, an inverter 3 for converting the DC power into an AC power, and an induction motor 4 driven by the AC power converted by the inverter 3.

Please replace the paragraph at page 12, line 25, with the following rewritten paragraph:

On the other hand, a control circuit of the inverter control device includes a V/F control pattern section 13, a motor voltage command generator 14, a PN voltage detector 15, a PN voltage corrector 16, a first motor voltage command corrector 17, a PWM controller 18, and the_a second motor voltage command corrector 19.

Please replace the paragraph at page 13, line 5, with the following rewritten paragraph:

The V/F control pattern section 13 determines the motor voltage value to be applied to the induction motor 4 on the basis of the speed command ω^* of the induction motor 4 given from outside. The motor voltage command generator 14 generates a voltage command of each phase of the induction motor 4 on the basis of the motor voltage value determined in the V/F control pattern section 13. The PN voltage detector 15 detects the DC voltage of the inverter 3. The PN voltage corrector 16 compares the predetermined reference DC voltage of the inverter 3 with the detected DC voltage of the inverter 3 obtained from the PN voltage detector 15, and calculates the PN voltage correction coefficient. The first motor voltage command corrector 17 multiplies the voltage command of each phase obtained from the motor voltage command generator 14

by the PN voltage correction coefficient produced from the PN voltage corrector 16 to correct the voltage command of each phase value, and generate the first corrected motor voltage command of the induction motor 4. The second motor voltage command corrector 19 generates the second corrected motor voltage command of the induction motor 4, only when any one of the first corrected motor voltage commands generated by the first motor voltage command corrector 17 is larger than the DC voltage of the inverter 3, by multiplying the first corrected motor voltage command by the DC voltage value of the inverter 3, and dividing the product of multiplication by the maximum value of the first corrected motor voltage commands. The PWM controller 18 generates PWM signals of the inverter 3 on the basis of the second motor voltage command correction value generated in the second motor voltage command corrector 19. It should be noted that the V/F control pattern section 13 has already been explained in relation to the related art, and thus its explanation is omitted herein. (See the inverter control device for driving an induction motor of V/F control system in Fig. 16.)

Please replace the paragraph at page 17, line 5, with the following rewritten paragraph:

Thus, in the inverter control device of this embodiment, since the voltage command of each phase is corrected by using the PN voltage correction coefficient, and thus a nearly constant motor voltage is applied even though fluctuations of the PN voltage occur. Hence a capacitor with large capacity is not needed, and a capacitor with small capacity can be used. By using the small capacity capacitor, the input current always flows into the motor, and the power factor of the input current is raised, so that the reactor can be reduced in size. Use of the small capacity capacitor and the small capacity reactor can provide the inverter control device for driving an induction motor which is small in size, light weight, and low cost. Accordingly, even if the inverter DC voltage fluctuates largely and driving an induction motor is difficult or even impossible, the inverter can be operated so that the voltage applied to the induction motor may be almost constant, and driving an induction motor may be maintained.

Please replace the paragraph at page 18, line 4, with the following rewritten paragraph:

Fig. 6 is a system block diagram of an inverter driving device for driving an induction motor in the second preferred embodiment of the invention. In Fig. 6, the main circuit is the same as in Embodiment 1.

Please replace the paragraph at page 20, line 6, with the following rewritten paragraph:

As shown in Fig. 7A when none of the first motor voltage commands v_{uh1}^* , v_{vh1}^* or v_{wh1}^* is over 240 V of the detected DC voltage v_{pn} , the third corrected motor voltage commands v_{uh3}^* , v_{vh3}^* , and v_{wh3}^* are the same values as the first corrected motor voltage commands v_{uh1}^* , v_{vh1}^* or v_{wh1}^* .

Please replace the paragraph at page 20, line 19, with the following rewritten paragraph:

Increase in the motor voltage leads to increase in the output torque of the induction motor, and if the desired power factor of the AC power source or harmonic components of the AC power source current may a-have a margin to a regulation value, this preferred embodiment may be a very effective means for raising the limit load tolerance of the induction motor.

Please replace the paragraph at page 21, line 9, with the following rewritten paragraph:

As shown in Fig. 8, By by changing step-wise the voltage saturation rate K, the saturation voltage reference value V_{pn1} is the same value as the DC voltage detection value v_{pn} , when the speed command ω^* is less than 100 Hz, and the control is the same as explained in Embodiment 1.

Please replace the paragraph at page 28, line 2, with the following rewritten paragraph:

Although the present invention has been described in connection with specified embodiments thereof, many other modifications, corrections and applications are apparent to those skilled in the art. Therefore, the present invention is not limited by the disclosure provided herein but limited only to the scope of the appended claims. The present disclosure relates to subject matter contained in Japanese Patent Application Nos. 2003-91184, filed on March 28, 2003, and 2004-054292, filed on February 27, 2004, which are expressly incorporated herein by reference in ~~its~~their entirety.